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# A NEW GENUS AND SPECIES OF GRASSHOPPER FROM CALIFORNIA

BY

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In the spring of 1917 (April 22-27), Mr. E. P. Van Duzee, curator of Entomology, Museum California Academy of Sciences, collected at Bryson in Monterey County, California. Among the material taken was a single specimen of grasshopper, which seemed to represent an undescribed genus and species.

Upon being informed of this fact, Mr. Van Duzee again visited Bryson, May 16-23, 1920, in order to obtain, if possible, additional material of the species. After considerable effort he was able to locate the habitat, and secured three additional specimens, all females.

## **Esselenia,**[1] new genus

The present genus shows a combination of characters which makes it most difficult to place. The form of the insect is more robust than that of any other North American Acridid; in fact, it is of a type quite similar to that usual in the Ommexechinæ.

The head is as full, with face as perpendicular, as in *Stirapleura,* the pronotum showing a generally similar construction of the lateral carinæ. The lateral foveolæ of the vertex are, however, not visible from above, in this feature agreeing with *Mesochloa* and *Phlibostroma,* the vertex itself being as broad as in the latter genus and intermediate between them in showing a subobsolete medio-longitudinal carinula. The antennæ

[1] The small Esselenian tribe of Indians once inhabited the region from which this genus is known.

are relatively heavy and flattened, much as in *Mesochloa* and *Cordillacris,* though not showing the slightly greater flattening proximad found in those genera.

The pronotum, with caudal portion of disk produced mesad and laterad and margin between concave, is distinctive. In *Mesochloa* and *Psoloessa* alone do we find mere traces of concavity of the lateral portions of the caudal margin of the pronotal disk.

The inner spurs of the caudal tibiæ are almost equal in length, in this agreeing with *Cordillacris,* but not as long and slender as in that genus.

The ovipositor valves are very short, as in all the other genera referred to above.

Taking all into consideration, we believe that *Esselenia* should be placed after *Phlibostroma,* though further study of the proper order of the related genera may lead to its being placed near *Stirapleura.* The system generally in use for the linear arrangement of the genera of the Acridinæ is clearly unsatisfactory, but can not be rectified until extensive studies of the subfamily are made.

Genotype.—*Esselenia vanduzeei,* new species.

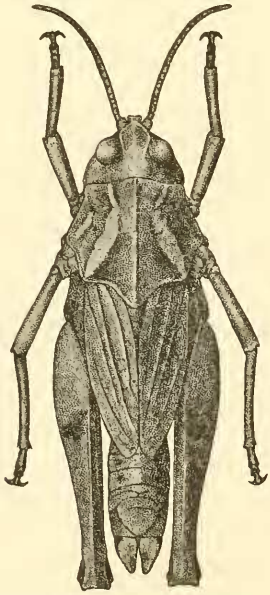

Figure 1.—*Esselenia vanduzeei,* new species. Dorsal view of type. Female. (X 3)

Generic description: Size medium small, form extremely robust for the Acridinæ. Head large; face vertical; vertex wide, its surface weakly concave and showing a subobsolete medio-longitudinal carinula, its lateral margins slightly raised and carinate; lateral foveolæ not visible from above; frontal costa decidedly concave throughout between the strong lateral carinæ. Eye rounded, scarcely deeper than broad, more nearly circular in outline than in *Stirapleura* and much less elongate than in any of the other genera here discussed. Antennæ short, moderately heavy, flattened. Pronotum with a distinct and percurrent medio-longitudinal carina, cut only by the principal sulcus; disk bounded laterad by distinct but irregular carinæ which are weakly convex-convergent to first sulcus, thence straight and strongly divergent. Caudal margin of lateral lobes and of each half of disk broadly concave, so that the pronotum is roundly produced at each shoulder and more strongly so mesad on the disk. Tegmina represented by large lateral pads. Ovipositor very short. Interspace between metasternal lobes of female slightly over twice as broad as long. Dorsal surface of caudal tibiæ with eight to ten spines on external margin. Internal spurs of caudal tibiæ heavy, the ventral spur being only slightly longer than the dorsal.

**Esselenia vanduzeei,** new species

We refer to the figure of this distinctive insect, as we know of no other species showing sufficiently close agreement to enable us to make a brief comparative analysis.

*Type:* Female, No. 736, Museum California Academy of Sciences; Bryson, Monterey County, California, April 27, 1917; E. P. Van Duzee, collector.

In addition to the characters described in the generic treatment, we would note the following: Lateral bounding carinæ of vertex straight, very narrow and diverging from the sharply rounded apex, forming nearly a right angle, to a point above the lateral ocelli; thence, for an equal distance, straight, broader and moderately converging to the point where they disappear into the rounded occiput.

Cephalic margin of pronotal disk weakly convex, appreciably less than one-half the distance between the extremities of the caudal margin; least width of disk about four-fifths the cephalic width. Surface of pronotal disk weakly tectate, moderately

wrinkled, this decided toward the lateral carinæ. Lateral lobes of pronotum with greatest depth equal to dorsal length; cephalic margin weakly convex and scarcely oblique to the obtuse-angulate, sharply rounded ventro-cephalic angle, ventral margin broadly convex to the rather broadly rounded, rectangulate, ventro-caudal angle; caudal margin broadly concave; sulci deeply impressed on lateral lobes.

Tegmina represented by broadly lanceolate pads with rounded apices, which are attingent (or weakly overlap), nearly as long as combined length of head and pronotum. Veins and cross-veinlets of tegmina heavy and distinct, forming a coarse and irregular network, in which, however, the principal veins, and particularly the humeral vein, are clearly defined.

Short ovipositor valves with heavy apices sharply curved. Caudal femora heavy, the ventral and particularly the dorsal portions evenly and broadly lamellate, the lamellation of the dorsal margin being over half as wide as the external pagina.

*Measurements (in millimeters)*

| Female | Length of body | Length of pronotum | Caudal width of pronotal disk | Length of tegmen | Width of tegmen | Length of caudal femur | Width of caudal femur |
|---|---|---|---|---|---|---|---|
| *Type* | 20.2 | 5.6 | 4.8 | 8.1 | 3.8 | 12. | 3.5 |
| *Paratype* | 22.2 | 6. | 5.3 | 8.1 | 4. | 12.1 | 3.9 |
| *Paratype* | 20.2 | 5.6 | 5. | 8. | 3.8 | 11.7 | 3.7 |
| *Paratype* | 20.8 | 5. | 4.4 | 7.6 | 4. | 11.8 | 3.7 |

General coloration (type, intensive) dark chestnut brown. Head paling to hazel on occiput, cheeks tawny, this continued as a U-shaped band from eyes, its lower portion crossing the labrum, frontal costa and ventral portion of infra-ocular sulcus suffused with black. Antennæ hazel, deepening to chestnut brown distad. Pronotum with median carina russet, bordered by a band of mars brown, lateral carinæ buffy tinged with russet, this broadening into a band on the metazona, the triangular areas between these and the medio-longitudinal band velvety blackish brown. Lateral lobes of pronotum irregularly paling to tawny meso-proximad and with a buffy callosity mesad which extends as a narrow line ventro-cauded to the caudal margin above the ventro-caudal angle. Tegmina pecan brown, the veins of the dorsal field suffused with black. Ventral surface of abdomen argus brown. Cephalic and median limbs hazel, mottled with chestnut brown. Caudal femora light ochraceous-tawny in proximal two-fifths, this terminated in external face of dorsal surface by a large triangular patch of

velvety blackish brown, this surface flecked proximo-dorsad with this color also; remaining distal portions pecan brown, suffused in genicular areas with blackish. Caudal tibiæ opposite genicular areas of caudal femora black, beyond this showing a broad buffy annulus, particularly distinct on the inner surface, remaining portions buckthorn brown, suffused distad with mummy brown; proximal internal spines mummy brown, other spines and spurs buckthorn brown, tipped with mummy brown.

One of the paratypes is similarly colored, except that the general coloration is much paler, walnut brown. Another has the color pattern much more strikingly defined, the blackish areas being as dark, but the medio-longitudinal band of head and pronotum light ochraceous-tawny, the tegmina ochraceous-tawny except in the sutural half of the dorsal section and the proximal portions of the caudal femora light ochraceous-salmon. The remaining paratype is almost uniformly sayal brown in coloration, the dark triangle dorsad on the caudal femora remaining as the only trace of color pattern.

In addition to the type, three female paratypes are before us, bearing the same data, but taken May 18, 1920. One of these is the property of the California Academy of Sciences, the other two are in the author's collection.

In securing these paratypes, Mr. Van Duzee had some difficulty in locating the proper environment in which to search for the species. They were taken in the same canyon as the type, on the grassy or sandy borders of a small mountain stream. At the time there was no running water in the stream, but little pools with level sandy flats between and it was on one of these flats that all were located. The exact spot is in the canyon back of the Bryson school house, about two miles east of the Nacimiento River and the same distance north of the San Luis Obispo County line.

The species probably reaches its greatest adult abundance in the early spring.

We take pleasure in naming this singular species in honor of the ardent student and collector who discovered it and who has subsequently, not without considerable difficulty, secured additional material and valuable data as to the immediate environment in which it occurs.